



Euronext - the leading pan-European market infrastructure



May 2021



Section I: Overview

THE LEADING PAN-EUROPEAN MARKET INFRASTRUCTURE



- Largest pool of liquidity, and diverse client base
- Home of European blue chips, small and mid-caps and fast-growing companies
- Post-trade offering including Italian CCP and network of CSDs
- Active member of local ecosystems and communities, with global reach
- Secured, reliable marketplace for investors and issuers
- Proprietary, cutting-edge technology

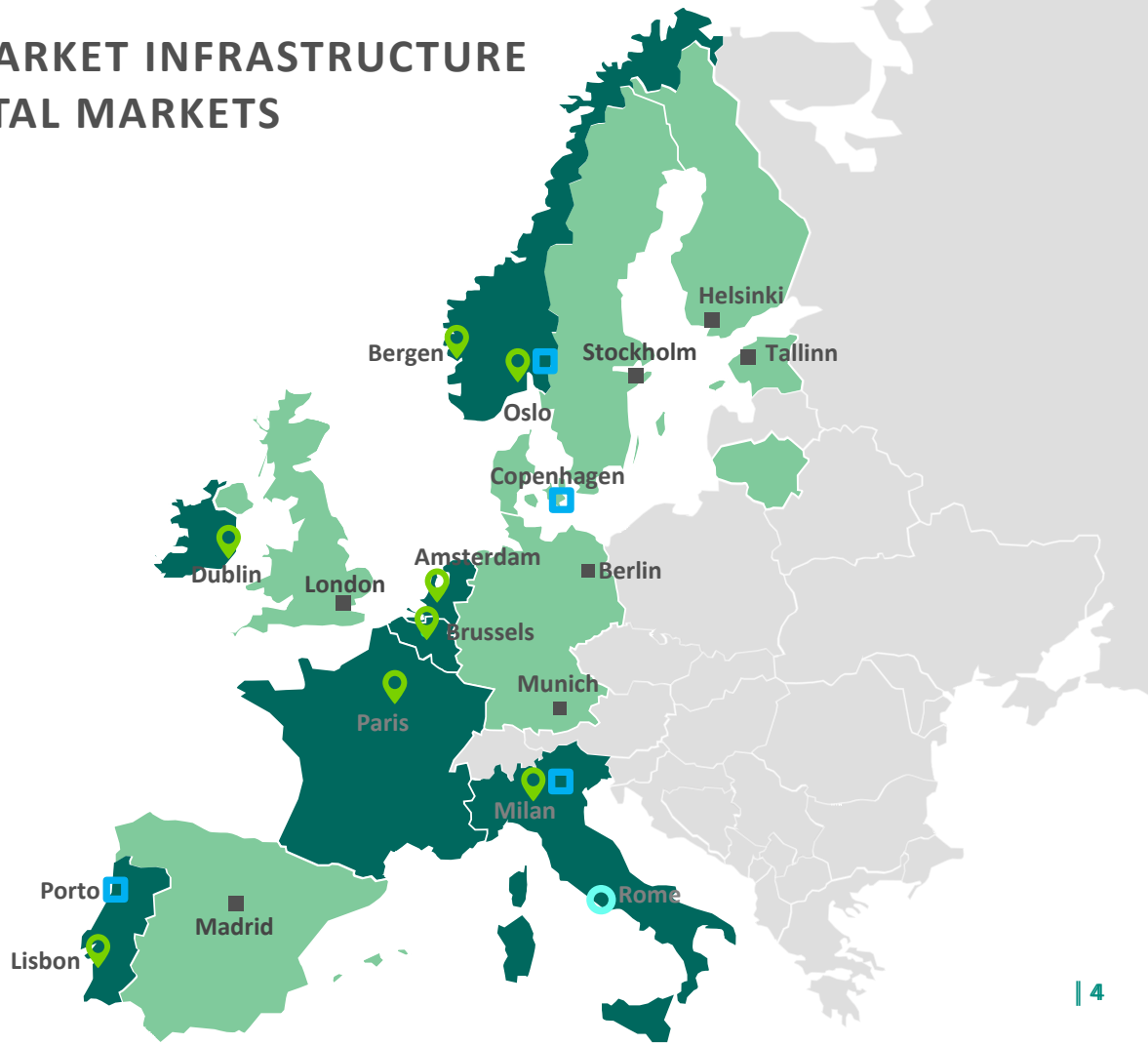
LEADING PAN-EUROPEAN MARKET INFRASTRUCTURE POWERING ACCESS TO CAPITAL MARKETS

- SINGLE ORDER BOOK*
- SINGLE TRADING TECHNOLOGY*
- SINGLE LIQUIDITY POOL
- SINGLE DATA FEED
- SINGLE COLLEGE OF REGULATORS
- HARMONISED RULE BOOK
- FEDERAL MODEL

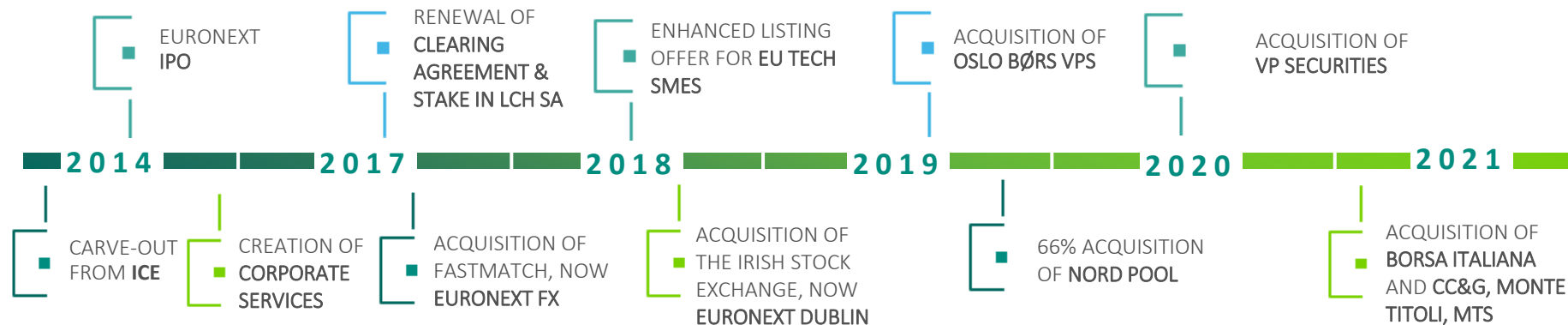
- Euronext markets
- Euronext presence
- 📍 Euronext regulated market
- 🏢 Euronext Central Securities Depository (CSD)
- 🔄 Euronext Central Counterparty
- European sales office

OFFICES IN NEW YORK AND SINGAPORE

*Borsa Italiana regulated markets will migrate to Optiq® in due course



INCREASING DIVERSIFICATION TO BENEFIT CLIENTS



Providing access to

POST-TRADE OPTIONALITY

- Ownership of Italian CCP Cassa di Compensazione e Garanzia S.p.A. (CC&G)
- Stake in LCH SA
- Ownership of network of CSDs: Euronext VPS (Norway), Interbolsa (Portugal), Monte Titoli (Italy), VP Securities (Denmark)

SERVICES FOR PUBLIC & PRIVATE COMPANIES

- Elite platform to enhance SMEs' growth
- Webcast services for IR and corporate events (Company Webcast)
- Board portal solution (iBabs)
- Compliance tools (ComplyLog)
- Advisory services

ASSET CLASS DIVERSIFICATION

- ESG franchise – advisory services, ESG products eg bonds, derivatives, indices
- Acquisition of FastMatch, now Euronext FX: US ECN for spot FX trading
- MTS – leading European govt bonds platform
- Tech SME listing offer in European markets

TECHNOLOGY INNOVATION

- Development of Optiq®, provider of technology & managed services to third parties
- Co-founding of LiquidShare, blockchain fintech for SME post-trade
- Digitalisation of financial assets with stake in Tokeny Solutions
- Technology services Gatelab and X2M

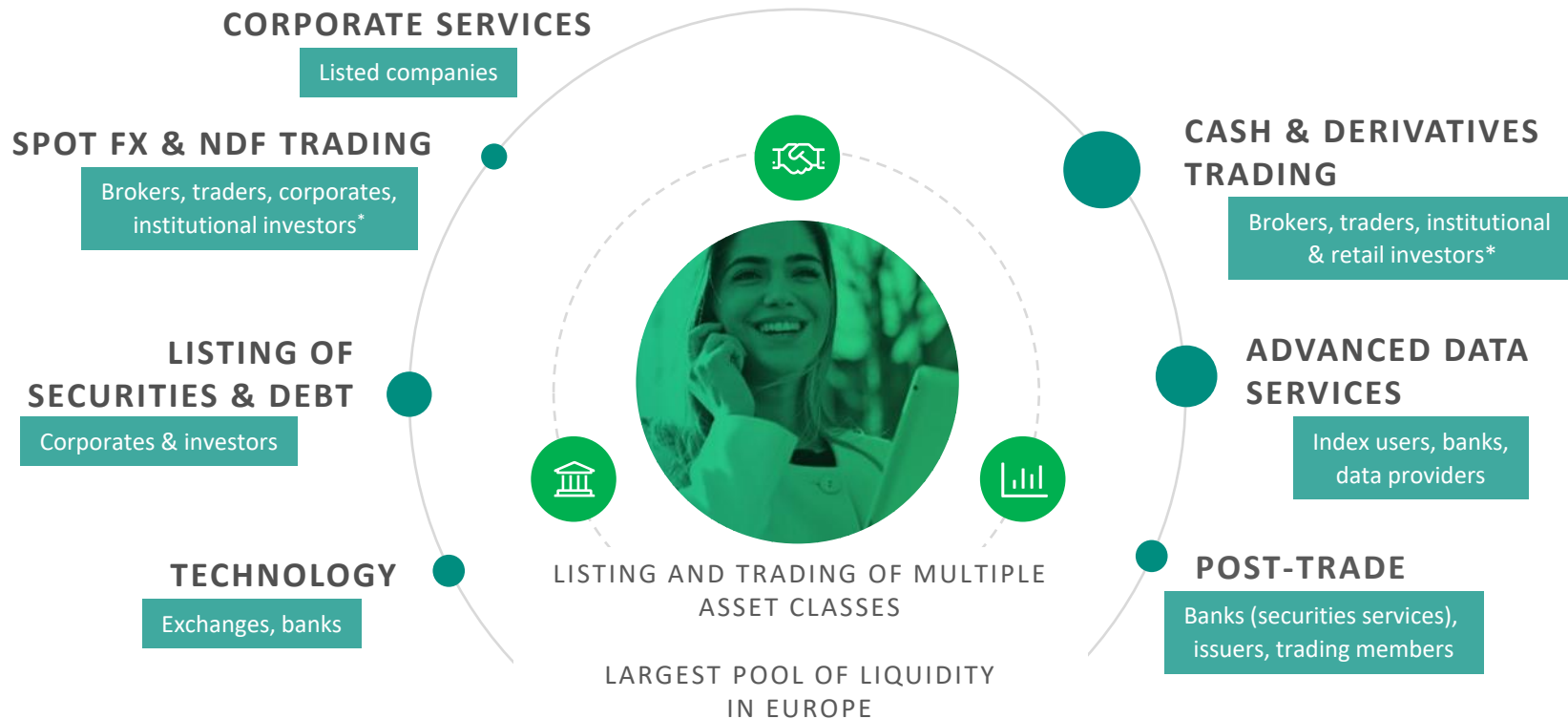
NEW EUROPEAN MARKETPLACES

- Italian ecosystem and leading European govt bonds trading platform
- Nordic ecosystem: hub for commodities with seafood, energy and shipping
- Power trading in 16 countries

BUY-SIDE & SELL-SIDE SERVICES

- Commission management with Commisce Buy, Sell, CS, CM
- Funds data provider OPCVM360, now Euronext Funds360

SERVING THE NEEDS OF MULTIPLE CUSTOMERS



TRADING ON THE EURONEXT MARKETS



EURONEXT REGULATED MARKETS

- **Cash Markets (equities, fixed income, funds, ETFs)** in Amsterdam, Brussels, Dublin, Lisbon, Milan, Oslo and Paris
- **Derivatives Markets** in Amsterdam, Brussels, Lisbon, Milan, Oslo, Paris and Bergen
- **Indices**
- **Market Data**
- **NDF trading** through Euronext Markets Singapore



MTF/ECN

- Euronext Block
- Euronext FX
- MTS
- Structured Products MTF



TRADING SERVICES

- **Best of Book**
- **Commise Buy, Sell, CS, CM**
- **Euronext Funds360**
- **Euronext Fund Services**
- **Reporting & publication services (APA/ARM)**
- **Request-for-Cross**
- **Wholesale trading**
- **Gatelab / X2M**



POST-TRADE PARTNERS

Clearing:

- CC&G¹
- LCH SA

Settlement:

- Euronext VPS¹ (Norway)
- Interbolsa¹ (Portugal)
- Monte Titoli¹ (Italy)
- VP Securities¹ (Denmark)
- Euroclear



EURONEXT

| ¹ A Euronext company





Section II: **Market Model - OPTIQ**

TRADING | EURONEXT OPERATES A SUPERIOR TRADING PLATFORM

WIDEST SET OF INVESTORS OFFERED BETTER EXECUTION TERMS THAN OTHER OFF-EXCHANGE VENUES



Pan-European platform

- Optiq – single order book across Euronext markets
- Large ecosystem of trading member firms
- Increase in trading of Irish stocks on-exchange post Optiq

Cutting-edge proprietary technology platform
Optiq® - premium level performance, increased stability and scalability



Improved liquidity

- Better price formation and transparency with more trading on-exchange
- Increased liquidity for Euronext Dublin issuers

Largest liquidity pool as #1 cash trading venue in Europe



Market quality

- Best execution for investors vs other trading venues
- Tighter Bid / Offer spreads

Market quality drives large institutions and liquidity providers to transact on-exchange



Access to indices

- Benchmark index inclusion doesn't impact FTSE status
- Euronext is a leader in ESG bond and equity segments
- Other € denominated index opportunities

Index expertise: home of the CAC 40, the CAC40 ESG, AEX-Index, BEL 20, PSI 20, ISEQ 20, OBX and Low Carbon 100 Europe



Access to EU investors

- Access to European investors through Euronext single platform
- Secured access to investors with € and euro listed mandates
- Increased visibility and branding in local European markets

Widest possible investor base provides greatest support to issuers for fundraisings and supports a strong after-market

DEVELOPING OPTIQ®, THE NEW GENERATION TRADING PLATFORM



Premium level performance

- Leverage state-of-the-art technology to ensure reliability, enhanced throughput and predictable latency



Increased stability

- Enhanced efficiency and performance through improved connectivity and protocols, and optimised messaging model



Flexibility

- Provide customers with a simplified and flexible system allowing better time-to-market to deliver new initiatives and implement customers' requests

Enhancing Euronext markets for its clients and partners

- Trading Members on Euronext Cash and Derivatives markets
- Technology providers offering software and access to Euronext markets
- Data vendors and clients consuming Euronext Market data
- Successful migration of Euronext Dublin market to Optiq®

Highly reliable and scalable platform to cope with further expansion and volatility

15µs

Latency, compared to 132µs on UTP

99.99%

Stability on equities

Unlimited scalability

Asset-classes agnostic

Migration timeline

- July 2017: migration from XDP to Market Data Gateway
- April – June 2018: Euronext Cash markets on Optiq®
- February 2019: Euronext Dublin on Optiq®
- December 2019 – Euronext Derivatives markets on Optiq®
- December 2020 – Oslo Børs on Optiq®

BENEFITS OF THE OPTIQ TRADING PLATFORM

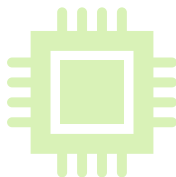
PREMIUM LEVEL PERFORMANCE

A single resilient route to **pan-European** Cash and Derivatives markets providing **reliability, enhanced throughput and predictable latency** for all asset classes



INCREASED STABILITY

Enhanced **efficiency** and **performance** through improved connectivity and protocols, and **optimised messaging model**



FLEXIBILITY

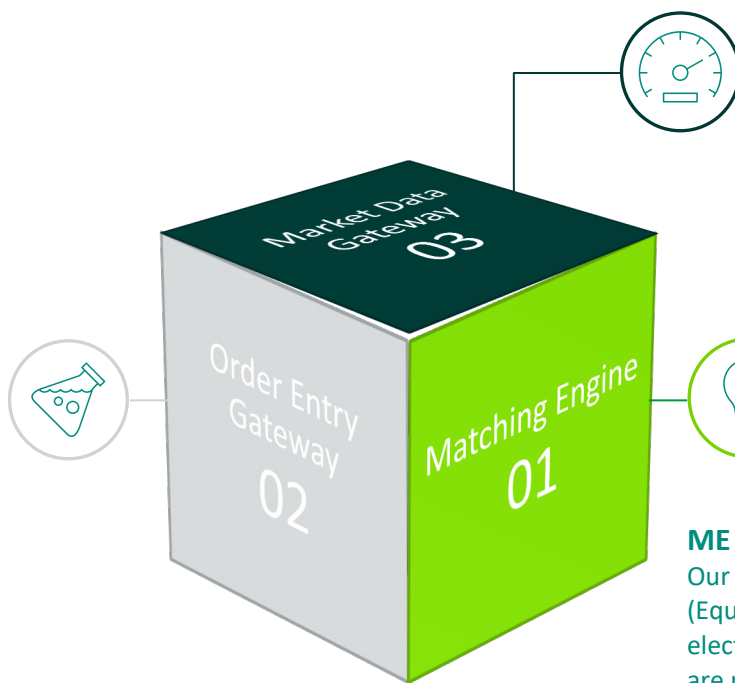
An **access model streamlined across markets**, enhanced for the specific needs of market participants, allowing **shorter time-to-market** to deliver new initiatives and implement customers' requests



EURONEXT TRADING CHAIN – OPTIQ

OEG – Order Entry Gateway

Trading Members send their orders (Buy / Sell) on our Trading Platform, via secured accesses (IP filtering, dedicated physical ports, Logical Access IDs...). Only certified/conformed members can trade on our platform.



Market Data Gateway

Market Data (creation / modification / cancellation of orders + executions + collars...) must be published in real time. Generated by Euronext, it is also fed to data vendors such as Bloomberg, Reuters and others (Boursorama...)

ME – Matching Engine

Our Trading Engine hosts all our tradable assets (Equities, ETFs, Bonds...) + their dedicated electronic order books (COB). Trading Hours are replicated. Trading Pattern (fixing + continuous) are applied at a group/ISIN level.

Framework for admission criteria for Members & issuers

Each Member chooses its main entry point



A single Euronext Rulebook (admission criteria for members)



A single Euronext Rulebook (admission criteria for companies)



Each company chooses its main entry point

SINGLE LIQUIDITY POOL (1/2)

- Members which wish to trade on Euronext markets only have to connect to a single IT gateway and **trading system - Optiq**: this simplifies connectivity and software maintenance.
- **The Optiq Matching Engine** supports, in turn, the Euronext **Single Liquidity Pool**: all orders related to a specific security are entered and registered into the Single Order Book.
- **Trading firms are free to decide** which markets they become Members of, thereby allowing them to trade the securities admitted to trading on those markets. Membership of one Euronext market does not automatically mean membership of all Euronext markets, however the process for extending Membership is straightforward.

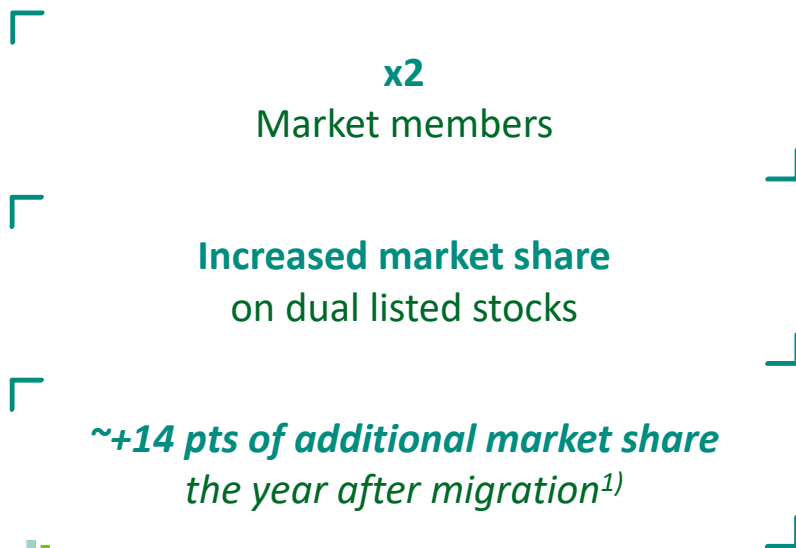
SINGLE LIQUIDITY POOL (2/2)

- In addition, while the IT structure underpinning the single orderbook is the same for all markets, some elements such as regulatory environments and post trade connections still **require local distinctions** within the system. This is why a trade membership is required per market, ensuring regulatory oversight.
- While the overwhelming majority of our rules across the Exchanges have been harmonised ('Rule Book 1'), there remain limited national rules in application ('Rule Book 2').
- The benefits of the Single Matching Engine in Optiq supporting a Single Liquidity Pool for the local Euronext markets can be best illustrated by the recent migrations of the Irish and Norwegian markets onto Optiq (see overleaf).

ACCESS TO EURONEXT'S ECOSYSTEM through OPTIQ® delivers tangible benefits



Euronext Dublin



Oslo Børs





Section III: Regulatory Architecture

OVERVIEW: REGULATED MARKETS, BENCHMARK ADMINISTRATORS AND CSDS



Euronext currently operates **exchanges** in six EEA countries (Belgium, France, Ireland, the Netherlands, Norway, and Portugal). Each of the European exchanges and/or its respective operator holds an exchange license granted by the relevant National Competent Authority and operates under its supervision. Each market operator is therefore subject to national laws and regulations and other regulatory requirements imposed by National Competent Authorities, Central Banks and Finance Ministries as appropriate.



The six National Competent authorities coordinate their regulation and supervision of the regulated markets operated by the Euronext Group through the “**Euronext College of Regulators**”, acting pursuant to a Memoranda of Understanding (MoU) which Euronext has committed to respect.



Areas that fall under the **scope of the College** include: (i) M&A, (ii) opening / closing of a Regulated Market (RMs) or Benchmark Administrator (BAs), (iii) significant changes that have a regulatory or material impact on the RMs / BAs, and (iv) amendments to the Euronext Harmonised Rulebook (including trading procedures).



On the **CSD side**, VP Securities in Denmark and Interbolsa in Portugal hold a license under CSDR, granted by their national competent authorities. Euronext VPS in Oslo submitted a CSDR authorization request to the Norwegian FSA in June 2020. All three CSDs operate under the supervision of their National Competent Authorities with no involvement of the College of Regulators.



Section IV:

Regulatory positions

– At a Glance

MiFID II REVIEW - At a Glance

Equities market structure

Suggested policy objective: strengthening price formation on European markets to the benefit of investors and companies

This requires a well-functioning pre- and post-trade transparency regime, with exemptions to transparency limited to large orders which can have significant market impact.

Euronext proposals:



A simplification of market models with a focus on those supporting price formation



Limiting non-transparent bilateral trading by investment firms' systematic internalisers to large orders



Removing the reference price and negotiated trade waivers

MiFID II REVIEW - At a Glance

Consolidated tape

Suggested policy objective: delivering an End-of-Day Tape-Of-Record (EOD TOR) as the optimal solution to the Commission's identified use-cases for a consolidated tape (CT)

While there are significant policy and operational concerns with the development of a real time CT, Euronext has developed a framework proposal for an EOD TOR that would meet the majority of the use-cases identified in the study produced for the Commission by an external consultant

Euronext proposals:



An end-of-day execution analysis file containing post-trade data enhanced with trade sides and available volume at execution time would represent the most appropriate solution to address the need for consolidation, especially in ETF and fixed income markets



This file would cover 100% of data sources and carry post-trade data together with information on liquidity available at execution. It would enable market participants to assess fragmentation and available liquidity across venues, as well as to support execution analysis allowing investors to validate the execution provided by their brokers. It would constitute a distinct offering and would not burden market participants with duplicative costs.

MiFID II REVIEW - At a Glance

Payment for order flow (PFOF)

Suggested policy objective: ensuring that retail investors get a good deal from European public capital markets

Recent events have underlined the need to investigate PFOF practices, be they explicit or implicit. In particular, the rise of venues offering free trading for retail orders from retail brokers - and the outcome for retail investors - should be assessed.

Euronext proposals:



Regulators and policymakers should review the practice of zero fee trading platforms, taking into account research such as our [own](#)



A fundamental review of relevant market structure provisions should be undertaken by the EU authorities, including consideration of whether both explicit and implicit PFOF should be banned

MiFID II REVIEW - At a Glance

Open access – Exchange Traded Derivatives (ETDs)

Suggested policy objective: remove ETDs from the scope of MiFIR open access

This would eliminate the prospect of liquidity fragmentation (at the trading level) and increased systemic risk (at the clearing level) in European exchange traded derivatives (ETDs)

Euronext proposals:



Implement a change to the Level 1 MiFIR provisions to remove ETDs from the scope of open access



Ahead of such a legislative change, extend the current exemption period beyond July 2021 via an ESMA no-action initiative

The leading pan-European market infrastructure



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